

AMENDMENTS TO THE CLAIMS

1.-3. (Canceled)

4. (Original) An adaptive motion direction detecting apparatus comprising:

an image input unit for inputting two-dimensional pixel data of an object having coordinate k ;

a response output unit including response elements having coordinate m and coordinate n , said coordinate m corresponding to one of a plurality of a local areas partly superposed thereon, into which said two-dimensional pixel data are divided, each of said response elements generating a response output $\eta_{m,n}(t)$ depending on a spatial response function $S_{m,k}$ and a time response function $T_n(t)$, said spatial response function being a Gaussian function centered at said coordinate m ;

a correlation function calculating unit for calculating spatial and time correlation functions $\Gamma_{m,n;m',n'}$ between the response outputs $\eta_{m,n}(t)$ and $\eta_{m',n'}(t)$;

a response output selecting unit for selecting response outputs of said response output unit in accordance with a said spatial and time correlation functions $\Gamma_{m,n;m',n'}$; and

a motion direction detecting unit including detection elements having coordinate i corresponding to coordinate m , each of said detection elements detecting a motion direction of said object at coordinate i in accordance with selected output response output for said coordinate i .

5.-7. (Canceled)

8. (Original) An adaptive motion direction detecting method comprising the steps of:

inputting two-dimensional pixel data of an object having coordinate k ;

dividing said two-dimensional data into a plurality of local areas partly superposed thereon, said local areas having spatial coordinate m and time coordinate n ;

generating a response output $\eta_{m,n}(t)$ depending a spatial response function $S_{m,k}$ and a time response function $T_n(t)$, said spatial response function being a Gaussian function centered at said coordinate m ;

calculating spatial and time correlation functions $\Gamma_{m,n;m',n'}$ between the response output $\eta_{m,n}(t)$ and $\eta_{m',n'}(t)$;

selecting response outputs of said response output unit in accordance with said spatial and time correlation functions $\Gamma_{m,n;m',n'}$; and

detecting a motion direction of said object at coordinate i corresponding to said coordinate m in accordance with a selected output response output for said coordinate i .